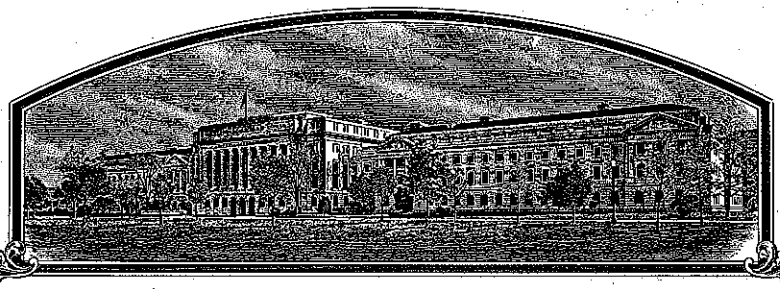

No. 200700383

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Texas Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) MAY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

COWPEA

'Golden Eye Cream'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this thirtieth day of July, in the year two thousand and eight.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions* — Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME	3. VARIETY NAME
Texas Agricultural Experiment Station	TX56061BRE	Golden Eye Cream

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*	5. TELEPHONE *(include area code)*	FOR OFFICIAL USE ONLY
Office of the Director, TAES 2147 TAMU College Station, TX 77843-2147	979-845-4747 6. FAX *(include area code)* 979-458-4765	PVPO NUMBER #200700383 FILING DATE July 24, 2007

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*	8. IF INCORPORATED, GIVE STATE OF INCORPORATION	9. DATE OF INCORPORATION
Texas State Research Agency		

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*

Janie Hurley, Licensing Mgr., Office of Technology Commercialization
The Texas A&M University System
3369 TAMU
College Station, TX 77843-3369

FEES RECEIVED
FILING AND EXAMINATION FEES: $ 4,382.00 DATE 7/24/07
CERTIFICATION FEE: $ 768.00 DATE 2/14/08

11. TELEPHONE (Include area code)	12. FAX (Include area code)	13. E-MAIL
979-847-8682	979-845-1402	jhurley@tamu.edu

14. CROP KIND *(Common Name)*	16. FAMILY NAME *(Botanical)*
Cowpea	Fabaceae
15. GENUS AND SPECIES NAME OF CROP	17. IS THE VARIETY A FIRST GENERATION HYBRID?
Vigna unguiculata L. (Walp.)	☐ YES ☑ NO

18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (***OPTIONAL***)
☐ YES ☑ NO
IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERICALIZATION. _____

19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)
- a. ☑ Exhibit A. Origin and Breeding History of the Variety
- b. ☑ Exhibit B. Statement of Distinctness
- c. ☑ Exhibit C. Objective Description of Variety
- d. ☑ Exhibit D. Additional Description of the Variety *(Optional)*
- e. ☑ Exhibit E. Statement of the Basis of the Owner's Ownership
- f. ☑ Exhibit F. Declaration Regarding Deposit
- g. ☑ Voucher Sample *(3,000 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
- h. ☑ Filing and Examination Fee ($4,382), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)*
☑ YES *(If "yes", answer items 21 and 22 below)* ☐ NO *(If "no", go to item 23)*

21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES?
☑ YES ☐ NO
IF YES, WHICH CLASSES? ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☑ YES ☐ NO
IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS.
2 FOUNDATION ☐ REGISTERED 5 CERTIFIED
(If additional explanation is necessary, please use the space indicated on the reverse.)

23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
☑ YES ☐ NO
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☐ YES ☑ NO
IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER		SIGNATURE OF OWNER	
Bill Mark Hussey			
NAME *(Please print or type)*		NAME *(Please print or type)*	
Mark A. Hussey			
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
Director, TAES	7-05-07		7-05-07

(See reverse for instructions and information collection burden statement)

#200700383

GENERAL INSTRUCTIONS: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E, F; (3) for a tuber reproduced variety, verification that a viable *(in the sense that it will reproduce an entire plant)* tissue culture will be deposited and maintained in an approved public repository; and (4) payment by credit card or check drawn on a U.S. bank for $4,382 ($518 filing fee and $3,864 examination fee), payable to "Treasurer of the United States" *(See Section 97.6 of the Regulations and Rules of Practice).* **NEW:** With the application for a seed reproduced variety **or by direct deposit soon after filing**, the applicant must provide at least 3,000 viable untreated seeds of the variety *per se*, and for a hybrid variety at least 3,000 untreated seeds of each line necessary to **reproduce** the variety. Partial applications will be held in the PVPO for not more than 90 days; then returned to the applicant as un-filed. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a payment by credit card or check payable to "Treasurer of the United States" in the amount of $768 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. *(See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)*

Plant Variety Protection Office
Telephone: (301) 504-5518 **FAX:** (301) 504-5291
General E-mail: PVPOmail@usda.gov
Homepage: http://www.ams.usda.gov/science/pvpo/PVPindex.htm

SPECIFIC INSTRUCTIONS:
To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and **provide evidence** that the permanent name of the application variety (even if it is a parental, inbred line) has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: U.S. Department of Agriculture, Agricultural Marketing Service, Livestock and Seed Programs, **Seed Regulatory and Testing Branch**, 801 Summit Crossing Place, Suite C, Gastonia, North Carolina 28054-2193 Telephone: (704) 810-8870. http://www.ams.usda.gov/lsg/seed.htm.

ITEM

19a. Give:
(1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified

19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:

(1) identify these varieties and state all differences objectively;
(2) attach replicated statistical data for characters expressed numerically and demonstrate that these are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.

19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.

19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, *etc.*

19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.

20. If "Yes" is specified *(seed of this variety be sold by variety name only, as a class of certified seed)*, the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. *(See Regulations and Rules of Practice, Section 97.103).*

23. *See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.*

24. *See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.*

22. CONTINUED FROM FRONT *(Please provide a statement as to the limitation and sequence of generations that may be certified.)*

23. CONTINUED FROM FRONT *(Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)*

Dec. 11, 2006 - Commercial exploitation agreement entered into with TX Oklahoma Production Co. for commercial production (U.S.)

24. CONTINUED FROM FRONT *(Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)*

Exhibit A. Origin and Breeding History of the Variety.

'Golden Eye Cream' (TX56061BRE) is a unique large seeded cream-type pea cultivar. It was developed for the fresh market and home garden trades to possibly replace some of the small seeded creams.

BREEDING HISTORY. 'Golden Eye Cream' was derived from a cross made in the greenhouse at College Station, TX in the Fall of 1984. The parents (Fig.1) were TX17032 (♀), an advanced breeding line from the Texas program, and US432 (♂), released as germplasm by the U.S. Dept. of Agriculture (USDA), Agricultural Research Service (ARS) in 1988 (Fery and Dukes, 1990). The parents of TX17032 were TVu4534, a breeding line obtained from the International Institute of Tropical Agriculture, and NCP III a land race collected by the senior author in Nigeria. The F_1 was selfed in the greenhouse in the spring of 1985 to produce F_2 seed. In summer 1985, a single-plant selection was made from the segregating F_2 population and assigned the breeding line number TX56061BRE. Single-plant selections were made from F3 and F4 rows in the summers of 1986 and 1987. Selection was based on the plant's superior architecture, pod location, and high yield of large attractive peas. Row selections were made for four subsequent cycles (F_5 to F_8) to ensure uniformity and stability of the line. Seed was increased in Lubbock and provided to TAES' Texas Foundation Seed Service for further increase.

The pedigree is shown in Figure 1 below:

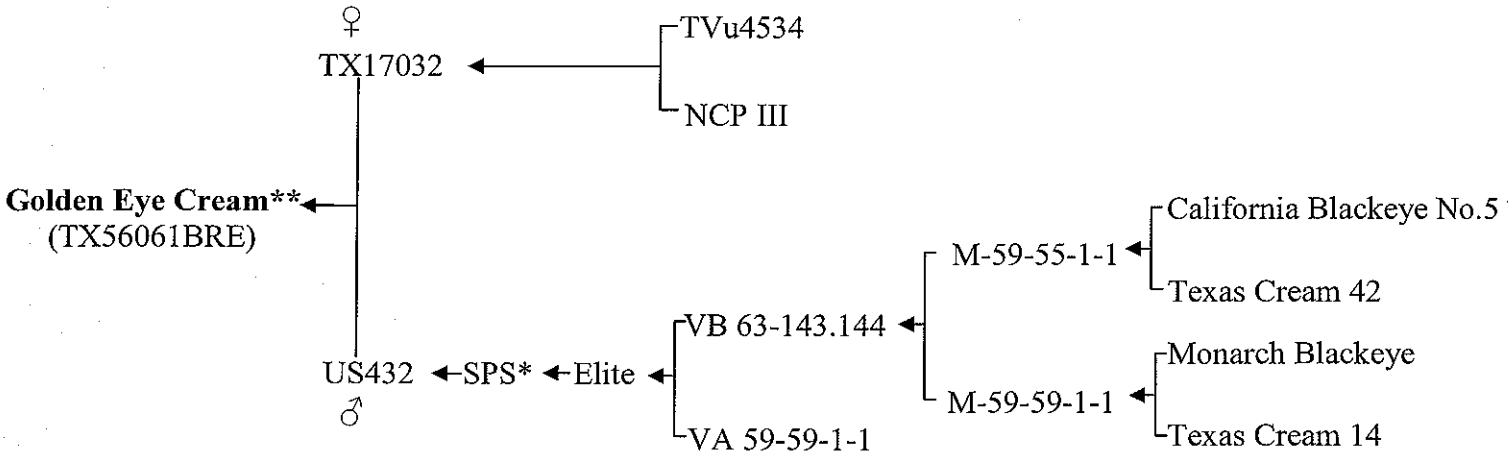

Fig. 1. 'Golden Eye Cream' southernpea pedigree.

'Golden Eye Cream' was observed for 4 generations in at least 7 locations and was determined to be genetically uniform and stable from generation to generation with no evidence of variants.

EVALUATION HISTORY. 'Golden Eye Cream' was entered in the Texas statewide cowpea testing program with locations near Weslaco, College Station, Temple, Overton, and Lubbock (data not shown) and as an entry in the 1991, 1992, and 1994 Regional Southernpea Cooperative Trials (Table 1.). It has also undergone commercial evaluation by several truck farm operations, where it has been very well received.

'Golden Eye Cream' was evaluated for three years (1991, 1992, and 1994) in the Regional Southernpea Cooperative Trials. These trials were conducted by 10 -12 cooperators, at 10-12 locations, across seven states. Field trials were composed of four replications in a randomized complete block design. 'Golden Eye Cream' yield has been rated outstanding in numerous trials throughout Texas and in the Regional Southernpea Cooperative Trials (Table 1). The yield generally has been significantly higher than that of 'White Acre' or 'Early Acre', (Morelock et al., 1992) especially when planted on narrow rows. 'Golden Eye Cream' generally produced a higher yield at all 12 locations across seven states than the small-seeded cream check cultivars. 'White Acre' and 'Early Acre' and yield equivalent to the pinkeye check, 'Pinkeye Purple Hull-BVR' (Kuhn et al., 1984). The 1991, 1992, and 1994 Regional Southernpea Cooperative Trial results from three narrow-row spacing sites at Kibler, AR (46 cm), Jackson, TN (76 cm), and Shorter, AL (76 cm) produced higher yields of 'Golden Eye Cream' than 'White Acre' and 'Early Acre' when planted on these narrow spacings (data not shown). Thus, 'Golden Eye Cream' offers producers greater flexibility in row spacing and planting configurations than the currently used cultivars. Due to synchronous flowering and pod set, 'Golden Eye Cream' can be harvested mechanically in the fresh green stage using a Pixall Harvester. Due to its large seed size, 'Golden Eye Cream' dry seed are subject to splitting if proper adjustments are not made to the combine at harvest. Because of this splitting, 'Golden Eye Cream' did not score as high as 'White Acre' or 'Early Acre' in food processing evaluations (canning tests) conducted by University of Arkansas cooperators (data not shown) and, therefore, may not be suitable for the canning industry. 'Golden Eye Cream' is recommended for use by both fresh market producers and home gardeners for the production of fresh-shell, cream-type peas.

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Table 1. Results from the 1991, 1992, and 1994 Regional Southernpea Cooperative Trials comparing 'Golden Eye Cream' with the check cultivars 'Pinkeye Purple Hull BVR', and 'White Acre' or 'Early Acre'.

1991

Cultivar	Days to Maturity	Percent Shellout	Imbibed Yield (kg/ha)[z]	Virus Symptoms[y]	Leaf Miner Ratings[y]	Root Knot Gall Index[y]	Root Knot Egg Index[y]	Curculio no. stings[x]	Stink Bug no. stings[x]
Golden Eye Cream	62 b	68 a	3501 a	4.0 b	3.5 a	1.4 b	1.3 c	8.0 c	4.5 b
PEPH-BVR	60 b	62 a	3443 a	3.3 c	3.6 a	3.6 b	3.3 b	86.8 a	6.3 b
White Acre	71 a	54 b	2446 b	4.8 a	4.0 a	4.6 a	4.4 a	46.3 b	13.3 a
Average	**70**	**61**	**3130**	**4.0**	**3.7**	**3.2**	**3.0**	**47.0**	**8.0**

[z]Average of 12 locations in AL, AR, LA, MO, SC, TN, and TX. Mean separation within columns by Student-Newman-Keuls multiple range test, $P \leq 0.05$

[y]1=No symptoms to 5=Severe infection

[x]Stings counted on peas shelled from 25 pods/plot

1992

Cultivar	Days to Maturity	Percent Shellout	Imbibed Yield (kg/ha)[z]	Virus Symptoms[y]	Leaf Miner Ratings[y]	Root Knot Gall Index[y]	Root Knot Egg Index[y]	Curculio no. stings[x]	Stink Bug no. stings[x]
Golden Eye Cream	67 b	65 a	2332 b	2.0 a	1.3 b	1.3 b	1.2 b	30.5 b	2.8 a
PEPH-BVR	63 b	54 b	3175 a	3.0 a	3.8 a	2.5 b	2.4 b	29.8 b	6.5 a
White Acre	76 a	51 b	1809 c	2.0 a	1.0 b	4.5 a	4.4 a	44.8 a	0.0 a
Average	**69**	**62**	**2439**	**2.3**	**2.0**	**2.8**	**2.7**	**35.0**	**3.1**

[z]Average of 11 locations in AL, AR, LA, MO, SC, TN, and TX. Mean separation within columns by Student-Newman-Keuls multiple range test, $P \leq 0.05$

[y]1=No symptoms to 5=Severe infection

[x]Stings counted on peas shelled from 25 pods/plot

1994

Cultivar	Days to Maturity	Percent Shellout	Imbibed Yield (kg/ha)[z]	Virus Symptoms[y]	Xantha-monas Ratings[y]	Root Knot Egg Index[y]
Golden Eye Cream	74 a	66 a	2892 a	2.0 a	3.0 a	1.1 c
PEPH-BVR	73 a	64 a	2875 a	2.0 a	1.0 b	3.1 b
Early Acre	75 a	58 b	2043 b	1.0 a	1.0 b	4.7 a
Average	**74**	**62**	**2603**	**1.7**	**1.6**	**3.0**

[z]Average of 10 locations in AL, AR, LA, MO, SC, TN, and TX. Mean separation within columns by Student-Newman-Keuls multiple range test, $P \leq 0.05$

[y]1=No symptoms to 5=Severe infection

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Exhibit B. Novelty Statement (Statement of Distinctness)

'Golden Eye Cream' is a unique large-seeded cream-type pea. The relatively tall, erect plants have pods at or above foliage, which aids in easy hand harvest and machine harvest. The variety also has high percent shellout. 'Golden Eye Cream' is most similar to 'White Acre' and 'Early Acre' except that: (i) 'Golden Eye Cream' matures earlier than 'White Acre' (68 days for 'Golden Eye Cream' vs. 74 days for 'White Acre'); (ii) 'Golden Eye Cream' produces higher percent shellout (66%) than 'White Acre' (52%); (iii) 'Golden Eye Cream' has consistently larger seed size than 'Early Acre' (32g/100 for 'Golden Eye Cream' vs. 13g/100 seed for 'Early Acre'); and (iv) 'Golden Eye Cream' exhibits higher levels of resistance (avg. 1.27 on a 1-5 scale with 1 being no symptoms of disease and 5 being severe infection) to root knot nematode (species *Meloidogyne incognita* Chitwood Race 1), than both 'White Acre' and 'Early Acre' (4.5 and 4.7, respectively) due to the presence of the single dominant gene Rk in 'Golden Eye Cream', whereas both 'White Acre' and 'Early Acre' lack this Rk gene.

Detailed Description:

Plant Characteristics:

- **Days to Maturity**

  'Golden Eye Cream' is an average of seven days earlier than 'White Acre' to dry shell maturity. It is about three days later than 'Pinkeye Purple Hull-BVR' (Table 1).

- **Percent Shellout**

  Due to its large seed size, 'Golden Eye Cream' has a significantly higher percentage shellout (66%) than 'White Acre', 52% (Table 1).

- **Seed Size**

  'Golden Eye Cream' has a large seed size – 32g/100 seed compared to 13g/100 seed for 'Early Acre' and 20g/100 seed for 'California Blackeye 46 (considered a medium-large seed in the industry). See Figure 1A below for comparison of seed size of 'White Acre', 'Early Acre', and 'Golden Eye Cream'.

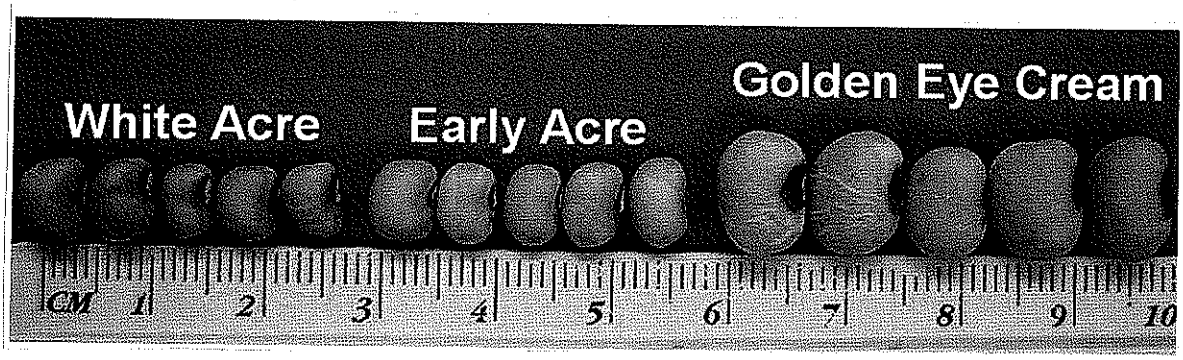

Figure 1A: Comparison of seed size of 'White Acre', 'Early Acre', and 'Golden Eye Cream'.

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Disease Reaction:

- **Root Knot Gall and Egg Indexes.** 'Golden Eye Cream' had significantly less root knot galls and eggs compared to the checks 'White Acre', 'Early Acre', and 'Pinkeye Purple Hull BVR' across three years. 'Golden Eye Cream' is considered resistant to root-knot nematode (*Meloidogyne incognita* Race 1) (Table 1), in testing at the U.S. Vegetable Laboratory, South Carolina, indicating it carries the single dominant gene designated Rk, whereas 'White Acre' and 'Early Acre' lack the Rk gene (unpublished data, P.D. Dukes and R. L. Fery, U.S. Vegetable Laboratory, USDA, ARS, Charleston, SC). Root knot is a major cowpea root disease incited by several species of root knot nematode of the genus *Meloidogyne,* in this case *Meloidogyne incognita* (Kofoid and White) Chitwood Race 1. Like most cowpea cultivars, 'Golden Eye Cream' is susceptible to powdery mildew (*Erysiphe polygoni* DC), cercospora leaf spot (*Cercospora* spp.), and bacterial blight (*Xanthamonas campestris*). Lesser Cornstalk Borer (*Elasmopalpus lignosellus)*, Thrip (*Frankliniella williamsi*), Cowpea Aphid (*Aphis craccivora*), Serpentine Leaf Miner (*Liriomyza trifolii*), Cowpea Curculio (*Chalcodermus aeneus*), and Stink Bug (*Nezara viridula*) have been observed on 'Golden Eye Cream'.

Table 1. Results from the 1991, 1992, and 1994 Regional Southernpea Cooperative Trials comparing 'Golden Eye Cream' with the check cultivars 'Pinkeye Purple Hull BVR', and 'White Acre' or 'Early Acre'.

1991

Cultivar	Days to Maturity	Percent Shellout	Imbibed Yield (kg/ha)[z]	Virus Symptoms[y]	Leaf Miner Ratings[y]	Root Knot Gall Index[y]	Root Knot Egg Index[y]	Curculio no. stings[x]	Stink Bug no. stings[x]
Golden Eye Cream	62 b	68 a	3501 a	4.0 b	3.5 a	1.4 b	1.3 c	8.0 c	4.5 b
PEPH-BVR	60 b	62 a	3443 a	3.3 c	3.6 a	3.6 b	3.3 b	86.8 a	6.3 b
White Acre	71 a	54 b	2446 b	4.8 a	4.0 a	4.6 a	4.4 a	46.3 b	13.3 a
Average	**70**	**61**	**3130**	**4.0**	**3.7**	**3.2**	**3.0**	**47.0**	**8.0**

[z]Average of 12 locations in AL, AR, LA, MO, SC, TN, and TX. Mean separation within columns by Student-Newman-Keuls multiple range test, $P \leq 0.05$

[y]1=No symptoms to 5=Severe infection. Means followed by the same letter, within columns, are not different, Duncan's multiple range test, P≤0.05

[x]Stings counted on peas shelled from 25 pods/plot. Means followed by the same letter, within columns, are not different, Duncan's multiple range test, P≤0.05

1992

Cultivar	Days to Maturity	Percent Shellout	Imbibed Yield (kg/ha)[z]	Virus Symptoms[y]	Leaf Miner Ratings[y]	Root Knot Gall Index[y]	Root Knot Egg Index[y]	Curculio no. stings[x]	Stink Bug no. stings[x]
Golden Eye Cream	67 b	65 a	2332 b	2.0 a	1.3 b	1.3 b	1.2 b	30.5 b	2.8 a
PEPH-BVR	63 b	54 b	3175 a	3.0 a	3.8 a	2.5 b	2.4 b	29.8 b	6.5 a
White Acre	76 a	51 b	1809 c	2.0 a	1.0 b	4.5 a	4.4 a	44.8 a	0.0 a
Average	**69**	**62**	**2439**	**2.3**	**2.0**	**2.8**	**2.7**	**35.0**	**3.1**

[z]Average of 12 locations in AL, AR, LA, MO, SC, TN, and TX. Mean separation within columns by Student-Newman-Keuls multiple range test, $P \leq 0.05$

[y]1=No symptoms to 5=Severe infection. Means followed by the same letter, within columns, are not different, Duncan's multiple range test, P≤0.05

[x]Stings counted on peas shelled from 25 pods/plot. Means followed by the same letter, within columns, are not different, Duncan's multiple range test, P≤0.05

1994

Cultivar	Days to Maturity	Percent Shellout	Imbibed Yield (kg/ha)[z]	Virus Symptoms[y]	Xantha-monas Ratings[y]	Root Knot Egg Index[y]
Golden Eye Cream	74 a	66 a	2892 a	2.0 a	3.0 a	1.1 c
PEPH-BVR	73 a	64 a	2875 a	2.0 a	1.0 b	3.1 b
Early Acre	75 a	58 b	2043 b	1.0 a	1.0 b	4.7 a
Average	**74**	**62**	**2603**	**1.7**	**1.6**	**3.0**

[z]Average of 10 locations in AL, AR, LA, MO, SC, TN, and TX. Mean separation within columns by Student-Newman-Keuls multiple range test, $P \leq 0.05$

y1=No symptoms to 5=Severe infection. Means followed by the same letter, within columns, are not different, Duncan's multiple range test, P≤0.05

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

Exhibit C

OBJECTIVE DESCRIPTION OF VARIETY
Cowpea

NAME OF APPLICANT (S)	TEMPORARY OR EXPERIMENTAL DESIGNATION	VARIETY NAME
Texas Agricultural Experiment Station	TX56061BRE	Golden Eye Cream

ADDRESS *(Street and No. or RD No., City, State, Zip Code and Country)*

Texas A&M University
TAES System Administration Bldg.
College Station, TX 77843

FOR OFFICIAL USE ONLY

PVPO NUMBER

#200700383

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

Place the appropriate number that describes the varietal characters typical of this variety in the spaces below.
Place a zero in the first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. PLANT HABIT AT GREEN SHELL STAGE:
[1] 1= Erect 2 = Semierect 3 = Procumbent 4 = Prostrate

2. PLANT SIZE:
[6][2] cm High at Maturity

3. STEM COLOR:
[1] 1= Green 2 = Purple

4. NODE COLOR:
[1] 1= Green 2 = Purple

5. FOLIAGE:
[2] 1= Open 2 = Compact

6. LEAF COLOR:
[1] 1= Light Green 2 = Medium Green 3 = Dark Green

7. LEAF SURFACE:
[1.5] 1 = Smooth 2 = Blistered

[2] 1 = Dull 2 = Glossy

8. FLOWER COLOR:
[3] 1 = Purple 2 = Lavender 3 = Tinged 4 = White

9. FIRST FLOWERING:
[4][6] Number of Days

10. POD:

[2] Placement: 1 = Below Foliage 2 = Above Foliage 3 = At Foliage Level

[1] Location: 1 = Scattered 2 = Bunched

[2][2] cm Long [ ][8] mm Wide

[1] Curveature 1 = Straight 2 = Curved

[2.5] Constrictions: 1 = None 2 = Slight 3 = Deep

[1] Surface (Green shell maturity) 1 = Dull 2 = Glossy

[1] Color (Green Shell Maturity): 1 = Silver-green 2 = Green 3 = Light Purple 4 = Dark Purple

[2] Color (Dry maturity): 1 = White 2 = Straw 3 = Drab 4 = Purple

[2] Cross Section (Green Shell Stage Width/Height): 1 = (1: <) 2 = (1: >) 3 = (1:1)

11. SEED:

[1][3] Number of Seeds Per Pod Shape (see Page 3) 1 = Kidney [2 = Ovate to Ovoid] 3 = Crowder 4 = Globose 5 = Rhomboid

[1][1] mm Long

[0][6] mm Wide [5] Hilar Eye Type:

SPECKLED BLOTCH NARROW BIG SMALL VERY SMALL

[3][2][4] gm per 1000 Seeds

[2] Coat: 1 = Wrinkled 2 = Smooth

[1] Color Pattern: 1 = Single Color 2 = Patterned 3 = Marbled 4 = Speckled

[10] Primary Color (Single Color or Basic Color): 1 = Purple 2 = Black 3 = Dull Black 4 = Blue 5 = Red 6 = Coffed 7 = Maroon 8 = Buff or Clay 9 = Pink 10 = White

SECONDARY COLORS PRODUCING THE PATTERN, MARLBLING OR SPECKLING (Enter a zero in boxes where the colors do not identify the secondary colors.):

[0] [0] 1 = Purple [0] [0] 2 Black [0] [0] 3 = Dull Black [0] [0] 4 = Blue [0] [0] 5 = Red

6 = Coffee 7 = Maroon 8 = Buff 9 = Pink 0 = White

12. DISEASE RESISTANCE (0 = Untested; 1 = Susceptible; 2 = Resistant):

[0] Fusarium Wilt	[2] Root Knot Nematode	[0] Charcoal Rot	[0] Zonate Leaf Spot
[0] Red Leaf Spot	[1] Powdery Mildew	[0] Cowpea Chlorotic Mottle Virus	[0] Southern Bean Mosaic Virus
[0] Bean Yellow Mosaic Virus	[0] Cucumber Mosaic Virus	[0] Bean Pod Mottle Virus	[0] Soybean Cyst Nematode
[0] Cowpea Yellow Mosaic Virus	[0] Bacterial Canker	[1] Cercospora Leaf Spot	[0] Sting Nematode
[0] Rust	[1] Southern Blight	[0] Root Rot	[ ] Other (Specify) _____

13. INSECT:

[0] Mexican Bean Beetle	[1] Cowpea Aphid	[1] Cowpea Curculio	[1] Stink Bugs
[1] Lesser Cornstalk Borer	[0] European Cornborer	[0] Corn Earworm	[0] Beet Armyworm
[1] Thrips	[1] Serpentine Leaf Miners	[ ] Other (Specify) _____	

14. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLE THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant size	California Blackeye 46	Plant habit	Texas Pinkeye Purple Hull
Pod size	Knuckle Purple Hull	Plant pigmentation	White Acre
No. days to maturity	Texas Pinkeye Purple Hull	Seed coloration	Bush Purple Hull

Instructions

GENERAL: The following publications may be used as a reference aid for completing this form:

1. C. V. Piper, 1912, *Agricultural Varieties of Cowpea and Related Species*, U.S.D.A., Bulleting No. 229.
2. L. L. Ligon, 1958, *Characteristics of Cowpea Varieties*, Oklahoma State University, Bulleting B-518.
3. W. J. Spillman and W. J. Sando, 1929, *Mendelian Factors in the Cowpea*, papers of the Michigan Academy of Science Arts and Letters, Vol XI.

10

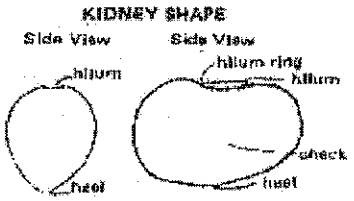
LEAF COLOR: Any recognized color chart may be used to determine the leaf color of the described variety. The following cowpea varieties may be used as a guide to identify colors listed:

1. Light Green – Texas Cream 40 2. Medium Green – Big Boy 3. Dark Green – California Blackeye #5.

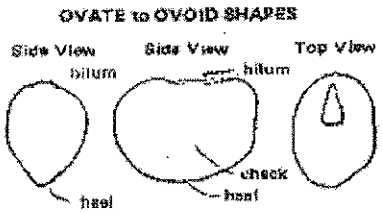
FLOWER COLOR: White flower should be treated with a one percent solution of hydrochloric acid to determine if anthocyanin is present. If color appears as a result of the test, classify as tinged.

TERMS USED TO DESCRIBE SHAPES:

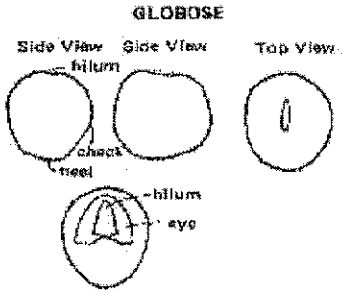
KIDNEY SHAPE

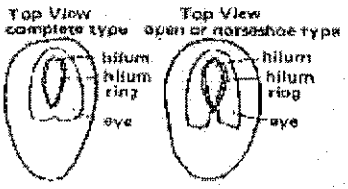


OVATE to OVOID SHAPES

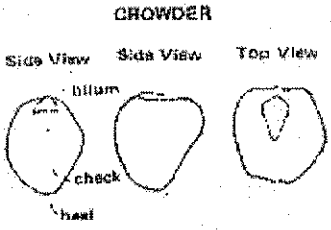


GLUBOSE





CROWDER



RHOMBOID

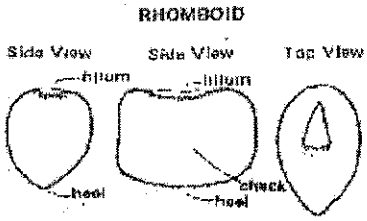
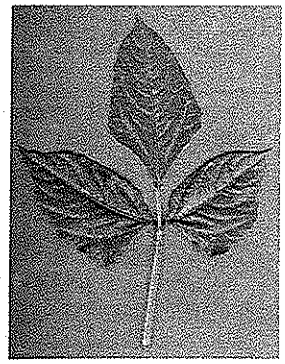


Exhibit D. Additional Description of the Variety.

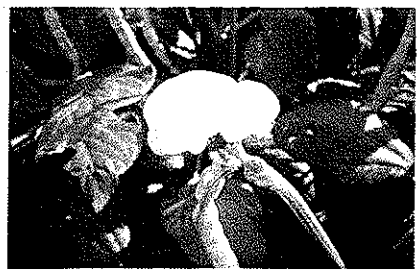
Plant, Vine, and Foliage Descriptors: (Figure 2A):

Growth Habit: 'Golden Eye Cream' has a distinct plant architecture, with a plant habit similar to 'Texas Pinkeye Purple Hull' and plant size similar to 'California Blackeye 46'. The plant's erect growth habit, which resists lodging, lends itself to narrow-row spacing and to mechanical harvest (both fresh machine harvest and direct combining of dry seed). There is no purple pigmentation on the stems, branches, or petioles, however, a very light pigmentation can be noticed on peduncles and pedicles just prior to senescence.
Stems: The stems and branches are green with no purple pigmentation.



Leaves ***(Figure 2B)****:* Compact foliage with light green leaves (RHS yellow-green 147A) which are glossy and more smooth than blistered.

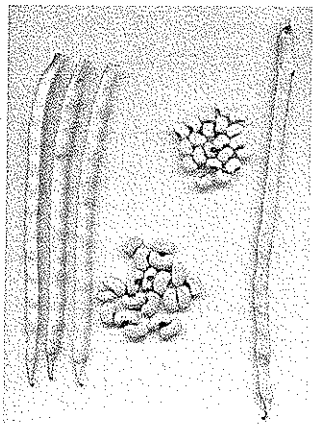
Flower Descriptors: (Figure 2C):



12

Inflorescences: The flowers are white (RHS white 155A) with a light yellow area on the interior lower central portion of the standard petal and, when tested for anthocyanins with 1% HCl, are tinged.

Pod and Seed Descriptors: (Figure 2D):



Pods: The straight pods with a slight bend at the attachment point average 22 cm long and 69 mm wide (Fig.2D), much longer and wider than 'White Acre' or 'Early Acre'. One to four pods per peduncle with an average of two are borne on long peduncles which place the pods slightly above the foliage (Fig. 2A). The dry pods resist seed shattering. At green-shell maturity, slight to deep constrictions are noted on the dull silver green pods (RHS grayed-yellow 162D) which are straw colored when dry (Fig. 2D).

*Seed **(Figure 2E)**:* One of the unique features of 'Golden Eye Cream' is the large seed size – ~32g/100 seed compared to ~13g/100 seed for 'Early Acre' and ~ 20g/100 seed for 'California Blackeye 46'. There is an average of 13 seeds per pod which measure 11 mm long and 6 mm wide in the dry stage. When dry, 'Golden Eye Cream' seed are slightly kidney to ovate shaped with a smooth, white seed coat. The hilar eye is medium-small, buff or clay (gold) in color, incomplete with a coffee colored hilum ring. In the fresh stage, the seed is large and light green in color (RHS yellow-green 145C), with no apparent eye.

Imbibed Yield

'Golden Eye Cream' consistently ranked higher for yield each year across the 12 locations and for eight of the twelve locations across the three years (Table 2). At the Kibler, AR location (18" row spacing), 'Golden Eye Cream' ranked highest for yield all three years and in two of the years out-yielded the checks by more than double. 'Golden Eye Cream' appears to perform well under high densities (Table 2).

'Golden Eye Cream' yield has been rated outstanding in numerous trials throughout Texas and in the Regional Southernpea Cooperative Trials (Table 1). The imbibed yield has been significantly higher than that of 'White Acre' or 'Early Acre', (Morelock et al., 1992) especially when planted on narrow rows (Table 2). In the 1991, 1992, and 1994 Regional Southernpea Cooperative Trials, 'Golden Eye Cream' produced a higher average yield at all but one of the 12 locations across seven states than the cream check cultivars 'White Acre' and 'Early Acre' and yield equivalent to the pinkeye check, 'Pinkeye Purple Hull-BVR' (Kuhn et al., 1984) (Tables 1 and 2). The 1991, 1992, and 1994 Regional Southernpea Cooperative Trial results from three narrow-row spacing sites at Kibler, AR (46 cm), Jackson, TN (76 cm), and Shorter, AL (76 cm) produced higher yields of 'Golden Eye Cream' than 'White Acre' and 'Early Acre' when planted on these narrow-row spacing (Table 2). Thus, 'Golden Eye Cream' offer producers greater flexibility in row spacing and planting configurations than the currently used cultivars. Due to synchronous flowering and pod set, 'Golden Eye Cream' can be harvested mechanically in the fresh green stage using a Pixall Harvester. Due to its large seed size, 'Golden Eye Cream' dry seed are subject to splitting if proper adjustments are not made to the combine at harvest. Because of this splitting, 'Golden Eye Cream' did not score significantly higher than 'White Acre' or 'Early Acre' in food processing evaluations (canning tests) conducted by University of Arkansas cooperators (Tables 3, 4, and 5) and, therefore, may not be suitable for the canning industry. 'Golden Eye Cream' is recommended for use by both fresh market producers and home gardeners for the production of fresh-shell, cream-type peas.

Insect and Disease Resistance/Susceptibility:

- **Virus.** 'Golden Eye Cream' performed similarly to the checks across three years (Table 1).

- **Leaf Miner.** 'Golden Eye Cream' performed similarly to the checks across two years (Table 1).

- **Stink Bug.** 'Golden Eye Cream' performed similarly to the checks across two years (Table 1).

- **Xanthamonas.** Based on one year of trialing and past visual observations, 'Golden Eye Cream' is susceptible to Bacterial Blight (*Xanthamonas campestris*) (Table 1) compared to the more resistant checks 'Early Acre' and "Pinkeye Purple Hull'.

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Processing Characteristics:

- **Canning.** Because of the large seed size of 'Golden Eye Cream', care must be taken at harvest to prevent seed breakage. This is noted in the wholeness and general appearance ratings in that there are significantly more broken seed of 'Golden Eye Cream' as compared to the other trial entries and checks (Tables 3, 4, and 5).

- **Culinary Qualities.** 'Golden Eye Cream' performed similarly to 'White Acre' and 'Early Acre' for pea and liquor color, texture, and flavor (Tables 3, 4, and 5).

Literature Cited

Fery, R.L. and P.D. Dukes. 1990. Registration of US-432 cowpea (southernpea) germplasm. Crop Sci. 30:428.

Morelock, T.E., J.L., Bowers, D.R. Davis, and D.R. Motes. 1992. 'Early Acre' a new southernpea for Arkansas. Arkansas Farm Res. 41:3, 6-7.

Kuhn, C.W., B.B. Brantley, J.W. Demski, and G. Pio–Ribeiro. 1984. 'Pinkeye Purple Hall-BVR', 'White Acre-BVR', and 'Corona' cowpeas. HortScience 19:592.

Table 2. Average imbibed yield and rank of 'Golden Eye Cream' and check cultivars across three years and 12 locations throughout the Southern US.

Year	Cultivar	Shorter, AL 30"	Bald Knob, AR 42"	Fayetteville, AR 36"	Kibler, AR 18"	Hope, AR 36"	Calhoun, LA 42"	Portageville, MO (91) 36" Jefferson, MO (92, 94) 36"	Charelston, SC 40"	Crossville, TN 36"	Jackson, TN 30"	College Station, TX 40"	Lubbock, TX 40"	AVERAGE
		Yield kg/ha												
1991	Golden Eye Cream	1605	4716	5637	5780	3648	1742	3782	2703	5695	2608	2252	1839	**3501**
	White Acre		5426	4745	945	5052	1558	1304	1551	2678	1204	908	1536	**2446**
1992	Golden Eye Cream	2337	4282	2521	2143	4095		2949	954			764	939	**2332**
	White Acre	386	2501		1359	4941	2111	1712	2005		1344	699	1032	**1809**
1994	Golden Eye Cream	1730		4226	3342	4797	2921	2672	2501	2187	2092		2447	**2892**
	Early Acre	815		4567	1958	2507	1036	2546	1901	2249	1752		1096	**2043**
Average	**Golden Eye Cream**	**1891**	**4499**	**4128**	**3755**	**4180**	**2331**	**3134**	**2053**	**3941**	**2350**	**1508**	**1742**	**2908**
	White/Early Acre	**601**	**3964**	**4656**	**1421**	**4167**	**1568**	**1854**	**1819**	**2463**	**1433**	**804**	**1221**	**2099**

Table 3. Sensory Evaluations - Southernpeas - 1991

	Selection	COLOR		Wholeness	Texture	Flavor	General Appearance
		Peas	Liquor				
R-1	TX 29114 BE	7.5	7.8	7.3	7.5	7.3	7.6
R-2	TX 56061 BRE	7.7	7.9	6.1	7.3	7.2	6.5
R-3	AU 84G67	7.2	7.1	8.1	8.2	7.9	7.3
R-4	AU 84G328	7.1	6.9	7.8	7.5	7.3	7.0
R-5	US 592	7.4	7.8	8.1	7.8	7.8	7.4
R-6	AR 87-435	7.6	7.6	8.4	7.8	7.5	7.9
R-7	AR 90-161	6.8	6.9	7.6	7.0	7.7	6.9
R-8	AR 89-205	7.7	6.2	8.5	8.0	8.1	7.0
R-9	PEPH-BVR	7.6	7.5	8.6	7.4	7.5	7.7
R-10	Mississippi Silver	5.8	5.7	7.0	6.9	7.2	6.0
R-11	Mississippi Cream	8.1	8.3	8.3	8.1	7.7	7.8
R-12	White Acre	7.7	7.7	8.7	7.9	8.1	7.8
	LSD.05	0.76	0.86	0.76	0.74	0.79	0.72

Score below 6 unacceptable.

N = 12.

Processed by D.R. Davis, Dept of Food Science, University of Arkansas, Fayetteville.

Table 4. Sensory Evaluations - Southernpeas - 1992

	Selection	COLOR		Wholeness	Texture	Flavor	General Appearance
		Peas	Liquor				
R-1	TX 29144 BE	8.0	8.0	6.7	7.6	7.1	7.0
R-2	TX 56061 BRE	7.4	7.4	5.9	6.9	6.7	5.9
R-3	TX 58048-2000 PE	8.7	8.1	7.6	8.3	8.0	8.1
R-4	TX 58051-1 PE	8.1	7.3	8.3	8.3	8.0	8.1
R-5	AU 84G328	7.4	7.4	7.7	8.0	7.3	7.4
R-6	AR 91-135	7.4	6.8	8.6	8.4	8.0	7.1
R-7	AR 91-245	9.0	7.9	9.0	8.1	7.8	8.6
R-8	AR 91-285	8.4	7.9	8.9	8.6	8.6	8.6
R-9	PEPH-BVR	7.9	8.1	7.7	8.4	8.4	7.9
R-10	Coronet	8.7	8.6	8.9	8.7	8.6	8.3
	LSD.05	0.9	1.1	0.8	0.7	0.9	1.1

Score below 6 unacceptable. Scale 1-10.

N = 7.

Processed by D.R. Davis, Dept of Food Science, University of Arkansas, Fayetteville.

Table 5. Sensory Evaluations - Southernpeas - 1994

	Selection	COLOR		Wholeness	Texture	Flavor	General Appearance
		Peas	Liquor				
R-1	TX38033CRM	8.9de	8.7 cde	8.8 cd	8.4 c	8.5 e	8.9 g
R-2	TX56061BRE	7.7 ab	7.3 a	5.7 a	7.4 a	7.1 a	6.7 a
R-3	TX87049-132BE	8.3 bcde	8.2 bcde	8.9 cd	8.1 bc	7.9 abcde	8.3 ef
R-4	TX87036-110PE	7.9 abc	7.7 ab	8.8 ccl	7.9 abc	7.6 abcd	8.2 de
R-5	AU93M-E	7.4 a	8.0 abcd	8.6 bed	8.1 bc	7.4 abc	7.7 bc
R-6	AU93M-G	8.2 bcd	9.0 e	8.7 cd	8.2 c	7.9 abcde	8.4 efg
R-7	AU93M-C	7.2 a	7.3 a	8.3 bc	7.9 abc	7.1 a	7.2 b
R-8	LA90-376	7.8 ab	7.8 ab	9.0 d	7.4 a	7.3 ab	7.7 bc
R-9	LA90-414	7.8 ab	8.0 abcd	8.9 cd	7.9 abc	7.9 abcde	7.8 cd
R-10	US630	8.6 cde	8.9 e	8.8 cd	7.9 abc	7.6 abcd	8.6 efg
R-11	91-285	8.2 bcd	8.4 bcde	89 cd	7.6 ab	8.0 bcde	82 de
R-12	91-245	8.2 bcd	8.8 de	8.9 cd	7.9 abc	7.9 abcde	8.6 efg
R-13	PEPH BVR	7.8 ab	7.9 abc	8.0 b	8.3 C	8.4 de	8.2 de
R-14	Coronet	7.8 ab	7.8 ab	9.0 d	8.3 c	8.1 cde	7.8 cd
R-15	Early Acre	9 e	9 e	9.0 d	8.2 c	8.0 bcde	8.8 fg
	LSD.05	0.7	0.9	0.6	0.6	0.8	0.5

Score below 6 unacceptable. Scale 1-10.

N = 11.

Processed by A.R. Gonzalez, Dept of Food Science, University of Arkansas, Fayetteville.

REPRODUCE LOCALLY. Include form number and edition date on all reproductions. FORM APPROVED - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

Application is required in order to determine if a plant variety protection certificate is to be issued *(7 U.S.C. 2421)*. The information is held confidential until the certificate is issued *(7 U.S.C. 2426)*.

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Texas Agricultural Experiment Station	TX56061BRE	Golden Eye Cream
4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	**5. TELEPHONE** *(Include area code)*	**6. FAX** *(Include area code)*
Office of the Director, TAES 2147 TAMU College Station, TX 77843-2147	(979) 845-4747	(979) 458-4765
	7. PVPO NUMBER	#200700383

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. **If no, please explain.** ☑ YES ☐ NO

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? **If no, give name of country.** ☑ YES ☐ NO

10. Is the applicant the original owner? ☑ YES ☐ NO **If no, please answer one of the following:**

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?
☐ YES ☐ NO **If no, give name of country**

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?
☐ YES ☐ NO **If no, give name of country**

11. Additional explanation on ownership *(Trace ownership from original breeder to current owner. Use the reverse for extra space if needed)*:

J. Creighton Miller, Jr., a TAES employee located at TAES' facilities in College Station, Texas, directed the final breeding and selections that led to development of the 'Golden Eye Cream' cultivar. TAES policy and handbook manual provide that all germplasm and varieties developed by its employees in the course of their duties are owned by TAES. A copy of this policy is provided for your records.

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

TEXAS AGRICULTURAL EXPERIMENT STATION HANDBOOK

NUMBER 1250B

PAGE 1 **OF** 8

ISSUED: March 31, 1995

STANDARD PROCEDURE

MANAGEMENT AND RELEASE OF NEW PLANT MATERIALS

1.00 PURPOSE AND BACKGROUND

The purpose of this document is to outline guidelines for the management and transfer of plant materials developed by the Texas Agricultural Experiment Station (Experiment Station) recognizing diversity in agronomic, horticultural, and industrial plant programs. The terms "plant material" and "seed" are intended to be all-inclusive, including vegetatively propagated plant materials, such as sprigs, rhizomes, or buds.

The Experiment Station, as part of the Texas A&M University System (System), and in cooperation with the Texas Agricultural Extension Service (Extension), conducts research in crop breeding and genetic improvement to benefit the public and support the educational mission of Texas A&M University (TAMU), including the development and release of improved germplasm and new crop cultivars.

The Experiment Station, part of the public agricultural research system, has a broad mission to serve agriculture, particularly farmers and the general public. Farm, commodity, and trade organizations are encouraged to provide suggestions to enhance crop improvement and the distribution of new plant materials. Plant materials are considered as intellectual property and are owned and managed by the Experiment Station, under System policies.

Three basic goals are summarized in Section 2.00 to guide release decisions. General guidelines and methods are outlined in Section 3.00 for transferring plant material for private and commercial uses. The classification of plant materials and types of releases is intended to assist both the breeder and seed users in understanding some alternatives in managing releases. Partnerships, joint incentives, and sharing of research materials are encouraged.

DISTRIBUTION:

ALL HANDBOOKS

APPROVAL:

Edward A. Hiler

EDWARD A. HILER

2.00 GOALS IN PLANT MANAGEMENT AND RELEASE

Three general goals provide the basic criteria for the management of plant materials and release decisions. These goals include:

A. Maximize Public Benefit. Plant material must be utilized by farmers and consumers to benefit the public. Plant material must be increased and managed to retain genetic purity. Variety or designated names provide identity and recognition to the originator of the improved plant materials. Commercial production and the distribution of plant releases are essential for both large and small acreage crops. Protection agreements and licensing provisions are frequently necessary to complete research and assure transfer of materials to the private sector.

B. Assure Technology Transfer to the Private Sector. The Experiment Station serves as a primary producer and distributor of new plant materials and depends upon the private sector to increase and market seed. State and federal plant protection provisions, protected names, trademarks, and/or markers (such as biochemical identification) may be useful in transferring technology to the private sector.

C. Recover Costs and Generate Revenue. The generation of funds through seed sales, fees, and other business terms is essential to recover some development costs and protection expenses, maintain competitive science, and enhance future crop improvement research. Financial terms and license provisions on plant materials must be realistic and consistent with the biological potentials and business environment.

3.00 GENERAL GUIDELINES AND KEY PARTICIPANTS

A. General Guidelines are outlined below for the orderly equitable release, distribution, and protection of plant materials.

Partnerships and Cooperation. The Experiment Station is responsible for research in crop breeding and genetic enhancement and assuring the timely transfer of this work to agricultural, scientific and industrial communities. Cooperation among the faculty and between faculty and external scientific and industrial interests is essential. Private interests are increasingly providing resources for research, in return for some preferential access to plant products and new technology. The commercialization of research had been encouraged both by Legislative mandates to the Experiment Station and through actions by the Board of Regents to provide financial incentives to faculty and staff to develop products or services of commercial usefulness.

Plant Release Proposals - Early discussion with Texas Foundation Seed Service (TFSS), the Plant Review Committee (PRC), and the System Technology Licensing Office (TLO) is encouraged in planning a new release. The breeder generally assumes a lead responsibility for preparing and submitting the Release Proposal (outlined in Section 5.00). Plant material is considered to be owned and under the stewardship of the Experiment Station. If a decision is made to not release particular plant materials, then the disposition and use of that material remains the discretion of the Experiment Station.

Exchange and Distribution. Exchange of plant material for breeding and genetic research is encouraged for public institutions and private industry and may include regional testing, Extension trials, and cooperative evaluations. "Selected Plant Materials" (see Section 4.00) may be provided to private firms, public breeders, grown on private lands, or placed with a private producer for further commercial evaluation before it is formally released.

Transfer and Protection - The formal release and transfer of new plant materials will usually involve public notices of availability and may involve Requests for Proposals or expressions of interest from private firms and/or the transfer of intellectual property rights through the use of licenses and agreements. The Experiment Station, in conjunction with the Breeder and the TLO, will consider applications for the appropriate intellectual property protection such as Certificates of Plant Variety Protection, Plant Patents, or Utility Patents in facilitating the transfer and protection of new plant materials. Additionally, in some instances individual firms and/or industrial groups may enter into research or partnership agreements on intellectual property, to gain access to genetic products.

Distribution of any plant material should be documented to avoid premature release, unauthorized distribution, misunderstandings over ownership, or loss of intellectual property rights. Protection agreements during research help assure that private firms can acquire rights and marketing opportunities later and/or protect their investment in marketing new products. Material Transfer Agreements (MTAs) are to be used in providing material to private firms and public agencies for evaluation (with copies filed with Texas Foundation Seed Service and the Technology Licensing Office).

B. Roles of Key Participants

Scientific quality, summary of research, review of proposals, and technology transfer involve several individuals and groups working together. Successful plant release includes institutional flexibility to meet the needs of each crop or release. Roles of primary participants are outlined as follows:

Plant Breeders and other scientists provide the major leadership in research and the release of plant materials. Responsibilities include research planning, periodic reviews on future releases, assuring materials are adequately protected, preparation of release proposals, and suggesting ways to implement release. A team is frequently involved with a release and may involve several disciplines and recognition of co-worker contributions.

Cooperative evaluations are encouraged, particularly with Extension Specialists. The Plant Review Committee commonly looks for Extension participation on new variety releases. Breeders maintain Breeder Seed and may provide technical or advisory assistance to TFSS, TLO or commercial firms.

Department Heads and Resident Directors provide a key role in crop improvement programs by guiding coordination between disciplines, and helping assure the TFSS, TLO and others are aware of potential releases. These Administrative Heads provide a vital linkage in planning, implementation and guidance for the total crop improvement program.

Program Coordinators provide communication among the developers of plant materials, the seed industry, and crop producers on scientific progress and the transfer of new materials into crop productions. The Head of the Department of Soil and Crop Sciences and Resident Director of Research at the Texas A&M Agricultural Research and Extension Center at Beaumont serve as Program Coordinators for all field crops and turfgrass, while the Head of the Department of Horticultural Sciences serves as the Program Coordinator for fruit, vegetable, and nut crops, including emphasis on industry relationships. Activities of Program Coordinators include:

1. Effective communication among breeders, department heads, resident directors, and with industry and producer interests;
2. Development of new partnerships between the Experiment Station and industry/producer interests, plus industry relationships and liaison with industry associations;
3. Advising the Director on release and licensing issues, and interacting with the Technology Licensing Office as appropriate. The Coordinators will report to the Director of the Experiment Station in these roles.

The Texas Foundation Seed Service, located at Vernon, will be responsible for the production of foundation seed and assisting breeders in the production of breeder's seed, as requested, and/or where required by a contract or license agreement managed by the TLO. The operation is expected to be largely self-sufficient.

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TFSS works with TLO, other Foundation Seed organizations, Crop Improvement Associations in other states, the Texas Department of Agriculture, USDA, and other state and federal agencies. When plant materials are licensed or managed under an agreement, TFSS works closely with the TLO.

TFSS works with a lead Extension Specialist to coordinate seed for county and regional field tests, manages the increase and distribution of foundation seed stock and handles revenues from seed sales and nonlicensed products.

The Plant Review Committee (PRC) is a standing internal committee appointed by the Director of the Experiment Station to oversee the orderly release of plant materials, provide guidance to TFSS and TLO, and to make recommendations to the Director of the Experiment Station on plant materials. Activities of the PRC include:

1. Establish technical review panels to evaluate release proposals.
2. Hold quarterly meetings to review release proposals and meet with breeders who are planning releases, and act on release proposals.
3. Provide recommendations to the TFSS, TLO and Director's Office on release proposals, cultivar names, and agreements on licensing and advise the Director of the Experiment Station on release and licensing issues. If a question arises between faculty on "proportional creativity" or royalty sharing, the PRC may make recommendations to the Experiment Station Director.

The Technology Licensing Office is involved in initial discussions and planning with breeders, unit heads, Program Coordinators, and TFSS on planned releases suitable for licensing. In conjunction with the Program Coordinators and breeders, the TLO provides leadership and initiative for the protection and management of intellectual property for new releases including the following services:

1. Management of license and royalty agreements;
2. Marketing of new selected plant materials to commercial firms;
3. Development and negotiation of license and evaluation agreements;
4. Management of intellectual property protection;
5. Advice on business strategies and intellectual property protection issues; and
6. Advises and keeps the Assistant Vice Chancellor for Administration (Agriculture) who represents the Experiment Station apprised of all services provided by the TLO in the management of new plant materials.

4.00 TYPES OF RELEASES AND PROTECTION

A. Classes of Material - Improved plant materials may result from genetic manipulation by plant breeding and/or molecular and cellular biology. For purposes of management and release, plant materials are classified as follows:

1. Genetic Stocks: Research in plant breeding, genetic and/or cellular and molecular biology may produce unique genetic characteristics or distinct genetic materials useful to other researchers. Examples include specific genetic characters, genes or gene constructs involving vectors, and promoters. An essential characteristic of genetic stocks is that they have no immediate commercial value.

2. Germplasm: Germplasm is commonly used to further research, with little value for increase or direct commercial use in its present form. However, some desirable characters may be immediately useful to breeders and industry in developing improved varieties in other research programs.

3. Breeding Lines: Breeding lines may contain useful characteristics of unique traits with apparent commercial value. Breeding lines may be increased in their present form, used for selection, or tested further before commercialization. The Experiment Station may choose to release some advanced materials as "breeding lines" rather than continue research for commercial applications as varieties or inbred lines.

4. Selected Plant Material: Selected plant materials may be transferred to public or private firms for cooperative research, usually under a protection agreement, for further development, feasibility studies, or commercial exploration.

5. Commercial Varieties or Parental/Inbred Line: These plant materials are released for direct commercialization as new varieties or production of hybrids; release depends on clear demonstration of performance or traits in several experiments over several years, locations and/or conditions.

B. Types of Releases and Transfer

Release of plant materials is based on several factors (such as crop species, means of propagation, and commercial potential). Flexibility is essential to meet specific economic, biological or industry needs. Alternatives for release and distribution of plant materials include:

1. Unrestricted Unlimited Release - An Unrestricted Unlimited Release is intended for general uses of those plant materials with undefined uses or low commercial potential, without any restrictions on research or commercialization uses. One-time fees may be requested to recover costs.

2. Restricted Release - A Restricted Release designates specific uses for plant material, with an agreement with recipients, noting restrictions, applications, and mutual interests.

3. Limited Release - A Limited Release involves specific recipients, to enable selected firms to use plant materials. Agreements may be developed with a small number of firm(s), firms selected on the basis of their proposal, and/or provide a protected position for a single firm or organization to complete research and/or assume commercial development. Limited Releases are usually managed under a license or option agreement, with financial terms and performance expectations.

4. Unreleased Transfer - Some plant materials may not be immediately released but simply provided to others for additional research or commercial feasibility studies. "Selected Plant Materials" may be managed under a Material Transfer Agreement or an Option Agreement, until specific traits and usefulness are determined and a formal release is proposed.

C. Pre-release Protection is essential to clarify ownership and transfer uses and rights to others later. Material Transfer Agreements (MTAs) and other sample documents are available from TLO. A copy of all pre-release documentation (MTA's and other documents) should be provided by the breeders to the Technology Licensing Office, Foundation Seed Service and Program Coordinators.

Exchange of plant materials for research uses with other public breeders may be handled directly by the breeders, through an MTA with the (1) identification and quantity of materials being provided to a co-worker, (2) clarifying the anticipated uses for breeding and research purposes, (3) stating that the Experiment Station retains its ownership, and (4) obtaining written acknowledgment from the recipient.

Field testing and commercial scale evaluations are encouraged, involving other breeders, Extension Specialists, farmers or others. Most commonly seed for one season is provided for field trials and is not to be retained or transferred to others. An MTA should be completed with farms or cooperators to clarify expectations.

5.00 THE RELEASE PROPOSAL AND PROCESS

A. Release proposals are prepared by the breeders and summarize the background, current facts, and plant performance/traits. The release proposal may vary in detail, depending on the class of plant material (please see Section 4), however all release proposals should include these sections:

1. Background - information on the source, origin, or breeding history.
2. Performance and Traits - summary of key features, data, anticipated usefulness, and/or disclosure limitations or unknown features. This section may be brief for germplasm and more detailed for a variety (including details on yields, statistics, quality, host plant resistance, and regions of adaptation).
3. Seed production and availability - type and quantity of seed availability for increase or distribution.
4. Implementation - breeder's suggestion on notifications, release and distribution, and guidance for outreach (including protection as appropriate) and revenue sharing (for royalties, if others were involved in the creative development).

The Release Proposal should be prepared for internal review with sufficient data and information for a peer group to evaluate merits and make decisions. Alternatively, the Release Proposal may be prepared (or later converted) as a Station publication, to document research and provide technical information for others.

B. Registration Article (for submission to a professional journal) should be with the proposal for a new variety or germplasm release. Include a draft of the Experiment Station Leaflet for new varieties. The original and 15 copies of the entire package Release proposal, Registration Article, and Leaflet (as appropriate) should be submitted through the administrative head and Program Coordinator to the PRC (with one copy to the Foundation Seed Office) eight weeks before the quarterly PRC meetings. Additional information on preparing and submitting releases is available from the PRC Chair.

C. Revenue Distribution

Royalties or income generated form the commercialization of plant materials will be distributed to the inventors on all types of plant material, according to the TAMU System policy on intellectual property (System Policy 17.02, Patents). Scientists involved in the development of plant materials that generate royalties or income under a license or option agreement must agree in advance regarding proportionate contributions and sharing of expected income prior to the distribution of such income.

(This revision replaces Standard Procedure 1250A, dated August 3, 1992)

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

EXHIBIT F
DECLARATION REGARDING DEPOSIT

NAME OF OWNER (S)	ADDRESS *(Street and No. or RD No., City, State, and Zip Code and Country)*	TEMPORARY OR EXPERIMENTAL DESIGNATION
Texas Agricultural Experiment Station	Office of the Director, TAES 2147 TAMU College Station, TX 77843-2147	TX56061BRE VARIETY NAME Golden Eye Cream
NAME OF OWNER REPRESENTATIVE (S)	ADDRESS *(Street and No. or RD No., City, State, and Zip Code and Country)*	FOR OFFICIAL USE ONLY
Mark A. Hussey	Office of the Director, TAES 2147 TAMU College Station, TX 77843-2147	PVPO NUMBER #200700383

#200700383

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.

Bill M'Cutchen
Signature

7-05-07
Date